

IEA DSM TASK 2 I

Standardization of Energy Savings Calculations



Why the Next Step in Energy Savings Calculations is Needed

Many countries have set policy targets for reducing emissions and identified energy efficiency as a key measure. To achieve these energy efficiency targets, countries have introduced various policies and programmes that target different sectors, such as household appliances, buildings and industries, and that include a wide range of instruments, such as regulatory directives, voluntary agreements, incentives or subsidies, financing options, and education and outreach. These policies and programmes have evolved over time to meet specific needs, and as a result tend to have their own objectives and implementation mechanisms.

While a number of these programmes have been successful, in the absence of a unified approach their full potential is often not realized and it is difficult to quantify the total energy efficiency savings, which is crucial from the government perspective. The challenge is to be as practical as possible – striving not for a Universal harmonised protocol, but for sound procedures to help countries increase the efficiency of their energy savings calculations and evaluations and to create a solid base that standardization organisations can use to take the next step.

Main Activities

The Task is focusing on harmonisation and standardization, but will not set new standards. The experts instead will conduct preparation work to ease the work of standardization bodies like ISO, CEN or ANSI.

Task Work

Subtask I — Existing Energy Savings Calculation (ESC) Standards and Standards Under Development, and Use of Most Relevant Reports for ESC

- Identify existing national and regional ESC standards and those under development.

- Identify basic concepts, calculation rules and systems.
- Identify and assess the most relevant evaluation and monitoring reports for ESC.
- Identify key elements of Demand Response products.

Results are published in reports (a) and (b) noted below.

Country reports present details for variable speed drive and high efficient motor programmes, heat pump programmes, heating in commercial buildings, air conditioning programmes, residential insulation programmes, and lighting programmes.

Subtask II — Basic Concept, Rules and Systems for ESC Standards

- Draft the basic terms and definitions, calculation rules and systems that are in use in ESC and how these are transformable to (draft) standards.
- Develop a methodology to structure Demand Response products, including ‘general accepted’ criteria.
- Identify how and why existing standards are or could be used or impact evaluation policies and measures.
- Provide comments to organisations with draft or under development ESC standards.

Results are published in reports (a), (c) and (d) noted below.

The six key elements identified are:

1. Formula used for the calculation(s)
2. Specification of the parameters in the calculation(s)
3. Specification of the unit for the calculation(s)
4. Baseline issues
5. Normalisation
6. Energy savings corrections (including gross-net corrections and corrections due to data collection problems)

Subtask III — Potential for Use and Continue Development and Maintenance of ESC

Standards

- Explore potential use - to what extent the basic terms and definitions, calculation rules and systems can be organised for use by national and international standards organizations, and how the standards can facilitate comparable evaluations of policies and measures.
- Identify organizations that could continue the research and development of such standards.

Results are published in reports (d) and (e) noted below.

The European Committee for Standardization European (CEN) published in September 2012 the standard EN16212:2012 “Introductory Element, Energy Efficiency and Savings Calculation, Top-down and Bottom-up Methods Complementary Element”. The International Organisation for Standardisation (ISO) is preparing such a standard for publication in 2013/2014.

Subtask IV — Communication and Information

- Inform experts and engage stakeholders in the Task’s work.
- Stimulate the adoption of the concepts and terms developed during the Task by the IPEEC and other international institutions.

Task Duration

The Task began in April 2009 and will end in April 2014.

Participating Countries

| | |
|-------------|---------------|
| France | Spain |
| Netherlands | Switzerland |
| Norway | United States |
| South Korea | |

Task Publications

(a) *Country Reports*: France, Netherlands, Norway, Republic of Korea, Spain, USA

(b) *Harmonised Energy Savings Calculations for Selected End-use Technologies, Key Elements and Practical Formulas*

(c) *Guidelines for Harmonised Energy Savings Calculations*

(d) *Roadmaps for improved Harmonised Energy Savings Calculations*

(e) Paper presented at the IEPEC conference 2013: “Will the introduction of Energy Efficiency Obligation schemes reduce evaluation efforts in Europe?”

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